REMARKS

The Applicant and his/her agent appreciates the courteous and complete examination of the application by the Examiner. In view of the foregoing amendments and the following remarks, a reconsideration of the instant application is respectfully requested.

In order to expedite the prosecution of this application, claims 2, 10, 18 and 19 have been canceled without prejudice or disclaimer of the subject matter thereof, in favor of Applicant's right to pursue the cancelled claims in a continuing application filed at a later date, thereby permitting the remaining allowed claims to issue as a patent. Claims 1, 3-9 and 11-17 have been amended, and claim 20 has been added Claims 1, 3-9, 11-17 and 20 are now in this application.

Regarding the Drawings

1) The Examiner objected the drawings for not showing every feature of the invention as specified in the claims, specifically the special couplings, the capacitor, and the two part ballast.

In response to the Examiner's objection, replacement drawing sheet 1 containing Fig. 2 is provided herewithafter. Fig. 2 now includes the special couplings (18), the capacitor (22), and the two part ballast (2, 12), thereby overcoming this objection.

Support for the new Fig. 2 is provided in Page 4, Para. 2 and 5, and Page 5, Para. 2. The Applicant points out that an applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Furthermore, as stated in MPEP 2163, while there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure. The Applicant therefore believes that the replacement drawing sheets are supported by the original application, as described above.

Additionally, Figs. 1-4 now include reference characters so as to more clearly describe the elements of the present invention.

2) The Examiner objected the drawings because the images on the left side of the drawings appear to be decorative banner.

In response to the Examiner's objection, replacement drawing sheets 1-3 containing Figs. 1-4 is provided herewithafter. The decorative banner in Figs. 1-4 has been removed, thereby overcoming this objection.

Regarding the Specification

The Applicant appreciates the opportunity to amend the specification. A new CROSS-REFERENCE TO RELATED APPLICATIONS section has been added to comply with 37 CFR 1.77.

3) The Examiner objected the specification because or several minor grammatical errors.

In response to the Examiner's objection, a substitute specification is provided herewithafter which corrects all grammatical errors, and which includes section headings so as to comply with 37 CFR 1.77(b).

Additionally, the specification has been amended to include reference characters therethroughout which correspond with the reference characters included in the replacement drawing sheets.

Regarding the Claims

Regarding the Claim § 112 Rejections

4) The Examiner rejected claims 1-17 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

The Examiner stated that it is "unclear how the microprocessor circuit actually generates the "voltage pulses" to be applied to the electrodes for exciting the fluorescent gas" as recited in claims 1 and 9.

The Applicant respectfully points out that it is known to one skilled in the art that the term "pulses" means typical waveforms with straight edges and short active states.

It is also known to one skilled in electronics that such properties can only be obtained by supplying a current to the electrodes of the fluorescent tube(s) in a

symmetrical electronic topology that can only includes resistive loads. In fact, the requirements stated above make necessary to have the current of electrons running exactly as an identical flow in the fluorescent gas, alternatively in one direction and the opposite, thus by mastering symmetrically the operation for the positive and the negative current sourcing.

Among others, the most popular electronic topology to drive voltage and/or current signals of perfect alternate polarity to a load (e.g. a fluorescent lamp) consists in a symmetrical pair of switches arranged in "H bridge" configuration. Such an application is known to one skilled in electronics. It can therefore be appreciated that to find applications for driving H-bridge power circuits in the existing literature proposed by every integrated circuit manufacturer, then one could use a simple search on the Internet to provide solutions and technical guidance.

However, the Applicant respectfully underline that the purpose of the present invention does not reside in describing an electronic topology, which is part of the common know-how domain for a person of ordinary skill in electronics, but resides in the application of pulses of perfect alternate polarity to the electrodes of a fluorescent tube to energize the fluorescent gas, as described throughout the specification as originally filed.

Additionally, the Examiner stated that it is unclear how the “special couplings…are activated by the ballast in order to short cut the filaments of the electrodes”, as recited in claims 5 and 13.

According to Page 4, Para. 1 of the original specification, the special couplings are installed in tube's connections and are controlled by the ballast to short cut cathode's filaments on right time (Page 4, Para. 1). Further, the special couplings can be activated by the ballast to short cut the cathode's filaments on right time, in order to cancel any current flow through it and so avoid losses of voltage (Page 4, Para. 5). One skilled in the art would easily understand that the ballast sends an electrical signal to activate the special couplings. It can therefore be appreciated that the specification and the general knowledge of one skilled in the art does provided sufficient enablement to the special couplings of claims 5 and 13.

Furthermore, the Examiner stated that it is unclear how the and how the "capacitor is temporally connected to increase the tension between the electrodes", as recited in claims 6 and 14.

According to Page 8, Para. 2 of the original specification, the capacitor is briefly connected in parallel with the tube in order to increase the voltage between the electrodes. One skilled in the art would know that the use of a capacitor increases voltage across parallel points. It can therefore be appreciated that the specification and the general knowledge of one skilled in the art does provided sufficient enablement to the capacitor of claims 6 and 14.

Lastly, the Examiner stated that it is unclear how the "two part ballast is assembled to have one part work specifically with "the main sector" and the second part work with the "non periodic pulses"".

According to Page 5, Para. 2 of the original specification, the first part is a standard ballast operating at normal main power supply voltage, and the second part is operated with the non periodic pulses. The Applicant respectfully attest that one of ordinary skill in the art would understand from the whole description and particularly from Page 5, Para. 2 and Figure 3 as originally filed that the second part of ballast is in parallel to the first part of ballast.

5) The Examiner rejected claims 1-17 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claims 1 and 9 contain more than one sentence, the terms "special couplings" in claim 5 and "the main sector" in claim 17 have improper antecedent basis, and the term "integers" in claims 1 and 9 is used to mean something other than its accepted meaning.

In response to the Examiner's rejection, claims 1 and 9 have been amended so as to be one sentence, thereby overcoming this rejection. Additionally, claims 5 and 17 have been amended to change the terms "the special couplings" and "the main sector" to "special couplings" and "a main sector" respectively, thereby introducing the elements

and overcoming this rejection. Furthermore, claims 1 and 9 have been amended to change the term “integers” to “comprises”, thereby overcoming this rejection.

The Examiner additionally stated that it is unclear whether claims 1-8 are method claims, and that claims 9-17 appear to be apparatus type claims.

In response to the Examiner’s statement, claims 1-8 have been amended so as to be directed to the method of operating luminaries, and claims 1-17 have been amended so as to be directed to an apparatus.

Regarding the Claim § 101 Rejection

6) The Examiner rejected claims 18 and 19 under 35 U.S.C. 101 as being directed to non-statutory subject matter.

In response to the Examiner’s rejection, claims 18 and 19 have been cancelled, thereby making this rejection moot.

Regarding the Claim § 102 Rejection

7) The Examiner rejected claims 1, 2, 4, 9, 10 12 and 17 under 35 U.S.C. 102(b) as being anticipated by Lesea. The Examiner’s rejection is respectfully traversed, because the cited reference does not teach the Applicant’s invention as claimed.

With regard to amended claims 1 and 9, the Lesea reference does not disclose, teach or suggest that voltage pulses are applied to the electrodes for exciting the fluorescent gas, wherein the “*pulses consisting of non periodic voltage levels separated by variable duration dead times being of alternative form including amplitudes of equal values but of positive and negative polarity*”, as per amended claim 1.

On the contrary, Lesea discloses that pulses are applied as gate driving signals to transistors (to the gates of transistors) (Fig.1, 62 and 64; Col.5, lines 29-35). Accordingly, inductive and capacitive loads of the network (28), as represented in drawings Figs. 3A, 3B and 3D should significantly modify the waveform presented on Fig. 2 in such a way that the signal applied to the electrodes of the fluorescent tube (12) is no longer considered like pulses.

It can therefore be appreciated that when applied to the conditions specified in claims 1 and 9 of the present application, i.e. pulsed current through the fluorescent gas, the application of the Lesea disclosure should drive to obtain the same operation like a Pulse-Width Modulation (PWM) circuit that monitors the variation of the Ton/Toff ratio in a low frequency alternative signal.

Further, the Lesea reference does not disclose, teach or suggest of any pulse with amplitudes of equal values but of positive and negative polarity. On the contrary, Lesea only mentions that "series of alternately positive-going and negative-going pulses are coupled to lamp 12 by a line 68 and network 28 which provides current limiting and, in some embodiments, voltage conditioning" (Col. 5, lines 35-39). Further, as it appears in Fig. 2 and Col. 6, lines 47-49 of Lesea, the voltage on line 56 is positive only.

The Applicant requests that the Examiner reconsiders his rejections of the invention in view of the well established principle that small differences in a crowded art can constitute patentable improvement. See *In re Baum*, 51 USPQ 470 (CCPA 1941) and *In re Lange*, 126 USPQ 365 (CCPA 1960). In considering this principle, the Applicant would also request that the Examiner take note to the court decision which notes that “apparent simplicity has been held to furnish strong argument for patentability where, as here, a need has existed for a structure of the nature disclosed and claimed. The fact that a solution to a problem is simple, or appears to be simple when viewed in retrospect, does not mean that the solution was obvious when it was conceived.” See *Ellipse corp. v. Ford Motor Co.*, 171 USPQ 513.

With regard to claims 4, 12 and 17, these claims are felt to be patentably distinguish over the prior art references because of their above-mentioned dependency from amended claims 1 and 9 respectively. With regard to claims 2 and 10, these claims have been cancelled thereby making this rejection moot.

Regarding the Claim § 103 Rejection

8) The Examiner rejected claims 3 and 11 under 35 U.S.C. 103(a) as being unpatentable over Lesea in view of Ribarich et al. (hereinafter Ribarich). The

Examiner's rejection is respectfully traversed, because the combination of cited references does not teach the Applicant's invention as claimed.

It can be appreciated that since Lesea does not disclose, teach or suggest all the features of amended claims 1 and 9, then claims 3 and 11 are felt to be patentably distinguish over the prior art references because of their above-mentioned dependency from amended claims 1 and 9 respectively.

Furthermore, the Ribarich reference, as with the Lesea reference, does not disclose, teach or suggest a ballast configured to generate voltage pulses applied to the electrodes for exciting the fluorescent gas in with "*the voltages pulses consisting of non periodic voltage levels separated by variable duration dead times being of alternative form including amplitudes of equal values but of positive and negative polarity*" as described in amended claims 1 and 9.

As the Supreme Court recently explained "a patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art." *KSR Int'l Co. v. Telejlex Inc., 550 U.S.*, 82 U.S.P.Q.2d 1385, 1396 (2007). Moreover, "'[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* (citing *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006) cited with approval in KSR). "To facilitate review, this analysis should be made explicit." *Id.* Furthermore, "[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning. See Graham, 383 U. S., at 36 (warning against a 'temptation to read into the prior art the teachings of the invention in issue' and instructing courts to 'guard against slipping into the use of hindsight' (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964)))." *Id.* at, 82 U.S.Q.P.2d at 1397.

9) The Examiner rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Lesea in view of Lau. The Examiner's rejection is respectfully traversed, because the combination of cited references does not teach the Applicant's invention as claimed.

Claim 5 is felt to be patentably distinguish over the prior art references because of its above-mentioned dependency from amended claim 1.

Additionally, Lau discloses a cease of the flow of current after the tube is lighted to avoid wasting of energy. The ballast disclosed in Lau comprises a DC-AC converter, an AC-DC converter, and an inductor. Accordingly, the Lau ballast generates an alternative periodic current as shown in Figs. 4 or 5. Further in Lau, it is the resonance of the circuit composed by inductor (16) and capacitors (22, 24) (Col. 5, lines 22-23) that is obtained and not a resonance effect in the gas of the fluorescent tube as described in the claims.

Still further, the Lau reference discloses an inductor (16) between the voltage generating means and the tube. Such an inductor introduces an impedance, the value of which increases with the speed of the variation. Accordingly it is impossible to apply pulse to the electrodes for exciting the fluorescent gas with such circuits.

10) The Examiner rejected claim 6 under 35 U.S.C. 103(a) as being unpatentable over Lesea in view of Blidgen. The Examiner's rejection is respectfully traversed, because the combination of cited references does not teach the Applicant's invention as claimed.

Claim 6 is felt to be patentably distinguish over the prior art references because of its above-mentioned dependency from amended claim 1.

Furthermore, Bildgen discloses an alternation of the current which flows into the lamp (Col 3, lines 8-9). But the Bildgen reference doesn't disclose, teach or suggest that the voltage is alternated with amplitude of equal values. On the contrary, the voltage in Bildgen is either positive when Com_b is open either negative but close to zero (threshold voltage of Db) when Com_b is closed.

Still further, the Bildgen reference discloses an inductor (L) between the voltage generating means and the tube. Such an inductor introduces an impedance, the value of which increases with the speed of the variation. Accordingly it is impossible to apply pulse to the electrodes for exciting the fluorescent gas with such circuits.

11) The Examiner rejected claim 7 under 35 U.S.C. 103(a) as being unpatentable over Lesea and Blidgen as applied to claim 6, and further in view of Toyama. The Examiner's rejection is respectfully traversed, because the combination of cited references does not teach the Applicant's invention as claimed.

Claim 7 is felt to be patentably distinguish over the prior art references because of its above-mentioned dependency from amended claim 1.

The Toyama reference discloses an inverter circuit (130) that inverts the current to drive the lamp by an alternate current (Col. 4, lines 21-24). This is in contrast to the claim 7, since the current is alternated but not the voltage (Col. 5, lines 48-55).

12) The Examiner rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Lesea in view of Katyl et al. (hereinafter Katyl) further in view of Vakil et al. (hereinafter Vakil). The Examiner's rejection is respectfully traversed, because the combination of cited references does not teach the Applicant's invention as claimed.

Claim 8 is felt to be patentably distinguish over the prior art references because of its above-mentioned dependency from amended claim 1.

Furthermore, the Katyl lamp driver (53) is configured to generate a square waveform. The lamp driver (53) is followed by coupling means (54) comprising inductor and Capacitor (156, 157). Accordingly, such a ballast comprising the circuit (54) of Katyl cannot generate voltage pulse but only an attenuated signal of the square waveform.

Vakil discloses that the switching section modulates the voltage to generate an AC drive current, which is in contrast to the present claimed invention where it is the voltage which is alternated. Further, as the switching section (46) comprises inductor (1.352 mH) such a driving section cannot generate voltage pulses.

13) The Examiner rejected claims 13-16 under 35 U.S.C. 103(a) as being unpatentable fro at lest all the same reasons as set forth above in the rejection of claims 5-9.

Claims 13-16 are felt to be patentably distinguish over the prior art references because of their above-mentioned dependency from amended claim 9.

Conclusion

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Applicant has endeavored to address all of the Examiner's concerns as expressed in the Office Action. Accordingly, amendments to the claims, the reasons therefor, and arguments in support of patentability of the pending claim set are presented above. Any claim amendments which are not specifically discussed in the above-remarks are made in order to improve the clarity of claim language, to correct grammatical mistakes or ambiguities, and to otherwise improve the clarity of the claims to particularly and distinctly point out the invention to those of skill in the art. Finally, Applicant submits that the claim limitations above represent only illustrative distinctions. Hence, there may be other patentable features that distinguish the claimed invention from the prior art.

With the above amendments being fully responsive to all outstanding rejections and formal requirements, it is respectfully submitted that the claims are now in condition for allowance, and a notice to that effect is earnestly solicited. Should the Examiner feel that there are further issues which might be resolved by means of telephone interview, the Examiner is cordially invited to telephone the undersigned at (403) 444-5695, or by email at davidguerra@internationalpatentgroup.com.

A three month extension of time fee of $555.00 is provided.

Respectfully Submitted,

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I hereby certify that this correspondence is being facsimile transmitted to the USPTO, electronically submitted using EFS-Web, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to: Mail Stop AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

On (Date) 07/15/2011 by David A. Guerra /David A. Guerra/